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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,473	07/17/2001	Ryuichi Murai	NAKI-BP44	4113

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EXAMINER	
QUARTERMAN, KEVIN J	
ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,473	MURAI ET AL.	
	Examiner	Art Unit	
	Kevin Quarterman	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33 and 38-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21-33 and 44-48* is/are allowed.

6)☒ Claim(s) *1-20,38-43 and 49-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 12 November 2004 and 18 November 2004 have been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-20, 38-43, and 49-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

4. Applicant has amended independent claims 1 and 38 to include a panel driving circuit and its specific features. However, the specific features of the panel driving circuit cited in the claims are not mentioned in the original disclosure or clearly shown in the drawings. In particular, there is no mentioning of a timesharing display method or a write discharge being performed between the scan and sustain electrodes paired in a

$(n+1)^{th}$ display electrode pair, after the write discharge performed between the scan and sustain electrodes in an n^{th} display electrode pair, where n is an arbitrary natural number.

5. Thus, the specific features of the panel driving circuit discussed above are deemed new matter, since the subject matter was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Due to their dependency upon independent claims 1 and 38, claims 2-20 and 39-43 are also rejected as failing to comply with the written description requirement.

6. Independent claims 49 and 50 also cite the field timesharing display method, as discussed above and deemed new matter, since it was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

7. Independent claim 51 cites a voltage applied to each of the electrodes so as to fire a write discharge sequentially per electrode pair. This citation also is deemed new matter, since it was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-3, 6-7, and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurogi (US 6495957).

10. Regarding independent claim 1, Figures 1-12 of Kurogi show a gas discharge panel (1) having a panel driving circuit (80) and having a plurality of cells (C) arranged in a matrix, each cell being filled with a discharge gas (col. 5, ln. 43) which is enclosed between a facing pair of substrates (10, 20) and a plurality of barrier ribs (29) interposed between the pair of substrates, and plural pairs of display electrodes (X, Y) each formed from a scan electrode and a sustain electrode and arranged on an inner surface of one of the substrates so as to extend in a row direction of the matrix across the cells, each pair of display electrodes comprising two bus lines (42) being parallel to each other and extending in the row direction of the matrix; one or more inner protrusions (412) being arranged within each cell on an inner side of one or both of the bus lines so as to protrude toward an inner side of an opposite bus line; and one or more outer protrusions (412) being arranged so as to protrude from an outer side of one or both of the bus lines, at least a section of each of the inner and outer protrusions being positioned between two adjacent barrier ribs. The Examiner notes that the method of operating (i.e. driving method) does not differentiate an apparatus claim from the prior art (see MPEP § 2114).

11. Regarding claim 2, Figures 1-12 of Kurogi shows a relation Pe=A X Ps/n being satisfied in relation to the two bus lines, Pe being a pitch of either the inner or outer protrusions, Ps being a pitch of the cells along the row direction of the matrix, A being a positive value less than 1, and n being a natural number.

12. Regarding claim 3, Kurogi discloses that the bus lines are composed of a metal and the inner and outer protrusions are composed of a transparent electrode material (col. 5, ln. 5-7).

13. Regarding claim 6, Figure 9 of Kurogi shows a width of an end section of each of the inner protrusions along the row direction of the matrix being narrower than a base section thereof.

14. Regarding claim 7, Figure 3 of Kurogi shows a shortest discharge gap (w1) between the plural pairs of display electrodes corresponding to a minimum discharge firing voltage or a voltage in the vicinity thereof as shown on a Paschen curve plotting a relationship between a Pd product and a discharge firing voltage, P being a pressure of the discharge gas and d being a discharge gap.

15. Regarding independent claim 38, Kurogi discloses each of the like limitations of independent claim 1, as discussed earlier. Figure 8 of Kurogi also shows each pair of electrodes being extended in a same direction; one or more inner protrusions (416) being arranged on an inner side of one or both of the electrode bases so as to protrude toward an inner side of an opposite electrode base; and one or more outer protrusions (415) being arranged so as to protrude from an outer side of one or both of the electrode bases.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 4-5 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurogi.

18. Regarding claims 4-5, Kurogi teaches the claimed limitations discussed earlier but fails to exemplify a surface area of each of the outer protrusions being greater than a surface area of each of the inner protrusions.

19. However, Kurogi discloses that the protrusions may be asymmetric about a point positioned centrally in the direction of the row on the base (col. 3-4), which would give the outer protrusions a greater surface area than the inner protrusions.

20. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the electrodes of Kurogi with outer protrusions having greater surface areas than those of the inner protrusions, since a change in size is generally recognized as being within the level of ordinary skill in the art.

21. Regarding claim 42, Kurogi teaches the claimed limitations of claim 10, as discussed above, but fails to exemplify the bus lines being composed of silver.

22. However, Kurogi discloses that the bus lines may be formed of a light-tight substance comprising a metal film (col. 10, ln. 21-22).

23. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide bus lines composed of silver in the structure of Kurogi, since it is within the general skill of a worker in the art to select a known material on the bases of its suitability for conducting electricity.

Allowable Subject Matter

24. Claims 21-33 and 44-48 are allowed.

25. Regarding independent claim 21, the prior art of record neither shows or suggests a gas discharge panel having, in addition to other limitations of the claim, plural pairs of display electrodes, wherein each pair of display electrodes comprising two bases being parallel to each other and extending in the row direction of a matrix and one or more inner protrusions being arranged within each cell on an inner side of each of the bases so as to protrude toward an inner side of an opposite base, the ends of the inner protrusions arranged on each of the bases being out of alignment along the row direction of the matrix. Due to their dependency upon independent claim 21, claims 22-27 are also allowable.

26. Regarding independent claims 28 and 33, the prior art of record neither shows or suggests a gas discharge panel having, in addition to other limitations of the claim, plural pairs of display electrodes, wherein each pair of display electrodes comprising two bases being extended in a row direction of a matrix and having a snaky

configuration along the plural pairs of display electrodes. Due to their dependency upon independent claim 28, claims 29-32 are also allowable.

27. Regarding independent claim 44, the prior art of record neither shows or suggests a gas discharge panel having, in addition to all other limitations of the claim, an insulating layer composed of magnesium oxide and a material having a lower electron emission rate than magnesium oxide.

28. Regarding independent claim 45, the prior art of record neither shows or suggests a gas discharge panel having, in addition to all other limitations of the claim, the ends of the outer protrusions arranged on each of the bus lines being out of alignment along the row direction of the matrix.

29. Regarding independent claim 46, the prior art of record neither shows or suggests a gas discharge panel having, in addition to all other limitations of the claim, each pair of electrodes with two electrode bases that extend in a same direction and snake along the one or more pairs of electrodes.

30. Regarding independent claim 47, the prior art of record neither shows or suggests a gas discharge panel having, in addition to all other limitations of the claim, the ends of the inner protrusions arranged on each of the electrode bases out of alignment. Due to its dependency upon independent claim 47, claim 48 is also allowable.

Response to Arguments

31. Applicant's arguments have been considered but are moot in view of the new grounds of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Quarterman
Examiner
Art Unit 2879

kq
31 January 2005

Joseph Williams
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